

**ABSTRACT OF THE DISCLOSURE**

Recombinant materials, including DNA constructs, expression vectors, and host cells, and methods of identifying an environmental stimulus or a gene that alters the lifespan of an organism are identified. The recombinant DNA constructs include first and second chimeric genes that both encode substantially the same protein that is required for yeast replication, the first chimeric gene containing a promoter responsive to growth medium conditions and the second chimeric gene containing a promoter operable in mother cells but not daughter cells.